

REMARKS

Claims 1-34 were pending in the application at the time of the Office Action. As a result of the amendments made above, Claim 4 has been canceled and claims 35 and 36 added, for a net addition of one total claim. A number of claims have been amended. The abstract of the disclosure has been amended. No changes to the drawings are presented herein.

Specification

The Examiner has objected to the abstract of the disclosure because it should be one paragraph only. The correction requested has been made above in the amendments.

Section 112 rejections

The Examiner's rejection under 35 USC 112, second paragraph, of claims 1-34 regarding the lack of proper antecedent basis found in claim 1 of "the switching means" has been considered and addressed in the above amendments.

Section 102 rejections

The Examiner has rejected claims 1, 3, 4, 8-11, 16, and 33 as anticipated by Matsuura (US Pat. 6,124,766) ("Matsuura '766"). The applicant respectfully traverses this rejection.

It is proposed by the applicant that Matsuura is not relevant to the present invention as now claimed, particularly in claim 1. Matsuura '766 relates to a frequency converter circuit, that is, a circuit that is adapted to convert an input signal that has a first oscillation frequency to an output signal that oscillates at a second frequency that differs from the first frequency. In contrast, the present invention is a voltage controlled oscillator ("VCO") that creates an oscillating output signal with an oscillation frequency that is controlled by a control voltage.

Further, the present invention differs in the manner of tuning the VCO. In general, the oscillation frequency of an LC circuit varies inversely with the square root of LC, where L is inductance and C is capacitance.

The frequency converter circuit of Matsuura '766 contains a VCO having a resonant circuit, shown as 411 in Fig. 2. However, it is tuned by changing the capacitance of a variable capacitance diode 25, as described at Col. 6, lines 47-54. The present invention describes such a circuit as being known prior art at paragraph [0002].

The present invention has a VCO where the oscillation frequency is controlled over a wide range by controlling the effective value of the inductance L. The inductance is described as having an "effective" value because it is switched between two fixed values during each

oscillation period, by transiently switching a second inductor into connection with a first inductor of the resonant circuit, either in parallel or in series. If there are at least two first inductors or at least two second inductors, then it is also possible to periodically switchably connect a second inductor in either parallel or in series with a first inductor of the LC-resonant circuit. For that reason, the oscillation frequency takes on a value corresponding to a time average of the two inductance values assumed during the oscillation period.

By controlling the time spans of a first and a second inductance value of the LC resonant circuit, the frequency of the resonant circuit is tuned. Paragraph [0011] of the specification describes this. Please note that paragraph [0026] uses an approximate formula for the resonance frequency that ignores the capacitance component.

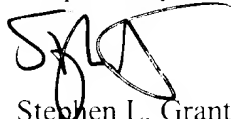
Because the limitations of claim 2 have not been literally incorporated into claim 1, the amended claim 1 does not represent an independent form of claim 2. However, the limitations introduced are believed to be sufficient to fully distinguish Matsuura '766, so allowance of claim 1 over Matsuura '766 is earnestly requested.

Allowable subject matter

The Examiner has indicated that a number of claims (2, 5-7, 12-15, 17-32 and 34) would be allowable if presented in independent form. For the reasons set forth above regarding Matsuura '766, it is proposed that all of the claims are allowable.

Accordingly, the applicant respectfully requests reconsideration of the rejections based on the claim amendments made above. After such reconsideration, it is urged that allowance of all claims will be in order.

Respectfully submitted,



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